Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V (DRAFT PERMIT) NO. V-05-065
CENTRAL MANUFACTURING COMPANY / CENTRAL LIGHT ALLOY
PARIS KY.
DECEMBER 13, 2005
BRIAN BALLARD, REVIEWER
SOURCE I.D. #: 021-017-00025
SOURCE A.I. #: 290
ACTIVITY #: APE19980002

SOURCE DESCRIPTION:
Central Motor Wheel of America dba Central Manufacturing Company / Central Light Alloy (CMC/CLA) operates a manufacturing facility in Paris, Bourbon County, Kentucky. The facility was previously permitted as two separate facilities but is now considered one facility for the purposes of permitting by the Division. CLA was previously identified with AFS ID number 21-017-00027 and A.I. number 289 and CMC was identified with AFS ID number 21-017-00025 and A.I. number 290. The combined facilities will now be identified with AFS ID number 21-017-00025 and A.I. number 290. Listed below are permits issued to the facilities previously by the Division:

Central Light Alloy	Central Manufacturing Company
C-93-086	C-86-232
S-96-146	C-88-013
S-96-149	C-88-137
S-96-146 (Revision 1)	C-88-214
S-99-017	C-90-161
VS-02-004	C-90-161 (Revised)
VF-02-005	O-93-017
	O-93-017 (Revised)
	S-98-062

The facility manufactures steel and aluminum wheels for automobiles and light-duty trucks. CMC manufactures steel wheels utilizing raw steel received from off-site locations. The steel wheels are stamped, bended, welded, cleaned and surface coated prior to shipping offsite. CLA manufactures aluminum wheels from aluminum ingots and molten aluminum metal received from off-site locations. The aluminum ingots are melted in one of two melting furnaces. After degassing, the molten aluminum is cast into wheels. The rough wheels pass through a machining process where they are deburred, abrasive blasted and leak tested prior to being cleaned and surface coated before shipping offsite.

CMC Paint Line

Emissions from electrocoating, EP04 (B-5) are calculated by material balance. The carry over efficiency to the electrocoating cure oven EP06 (B-6) that is used to calculate Volatile Organic Compound (VOC) emissions is 25 percent. The carry over efficiency is based on existing data in the 2004 KYEIS (Kentucky Emission Inventory Survey) database for the CMC Topcoat booth. The destruction efficiency used in the calculation of VOC emissions is 99.4 percent and is based on the performance test results for Regenerative Thermal Oxidizer (RTO) No. 2 from the test conducted on April 18, 2001. It is assumed that 100 percent of the VOC emissions from the oven are captured. The permittee will be required by permit V-05-065 to determine the overall collection efficiency of VOC by RTO-2 no later than January 2, 2007 (The initial compliance for an existing affected source subject to 40 CFR 63, Subpart MMMM begins on January 2, 2007). The destruction efficiency of RTO-2 must be determined no later than January 2, 2007 and once every five years thereafter.

Emissions from the topcoat booth, EP07 (B-8) are calculated by material balance. The booth is equipped with two reciprocating sprayers. Each reciprocating sprayer has three electrostatic spray guns. The booth is also equipped with four air-atomized robot spray guns. An overall transfer efficiency of 50 percent is used in the calculation of PM emissions (referenced from Chapter 4, Sections 1 and 2 of the document *EPA 305-B-95-002, August, 1998, Self-Audit and Inspection Guide for Facilities Conducting Cleaning, Preparation, And Organic Coating of Metal Parts*. The booth is equipped with three stages of filters for control of PM. A control efficiency of 99 percent is used in the calculation of PM emissions. The carry over efficiency to the paint cure oven, EP08 (B-9) used to calculate VOC emissions is 25 percent. The carry over efficiency is based on data in the 2004 KYEIS database for the CMC Topcoat Booth. It is assumed that 100 percent of the VOC emissions from the oven are captured. The permittee will be required by permit V-05-065 to determine the overall collection efficiency of VOC by RTO-2 no later than January 2, 2007. The destruction efficiency of RTO-2 must be determined no later than January 2, 2007 and once every five years thereafter.

Emissions from the steel wheel repair booth, EP09 (B-12) are calculated by material balance. The booth is equipped with one manual applicator. The transfer efficiency used in calculating PM emissions is 40 percent. The booth is equipped with a single stage over spray filter for PM emissions. A control efficiency of 95 percent is used in the calculation of PM emissions. VOC emissions from this booth are uncontrolled.

Permit O-93-017 (Revised) contains emission limits for sodium tetraborate and potassium hydroxide based on the now repealed 401 KAR 63:022. 401 KAR 63:021 requires that the source shall continue to comply with these conditions unless it can demonstrate that a condition is no longer necessary to protect human health and the environment. Section D(5) of Permit V-05-065 details conditions which must be met in order for the Division to evaluate compliance with 401 KAR 63:020, potentially hazardous matter or toxic substances. These conditions address source-wide toxic emissions. A demonstration of compliance with 401 KAR 63:020 will be sufficient to provide for the removal of the 401 KAR 63:022 conditions for the source.

CLA Melting and Casting

Emissions of Hydrogen Fluoride (HF) from Melt Furnaces No. 2, No.3 (EP11 & 14) and Degassers No.1, No.2 and No.3 (EP12, 13 & 15) are calculated using emission factors supplied in the application, which have been determined by a material balance. Emissions of chromium, nickel and PM from these emission points are also calculated using emission factors supplied in the application. PM emissions from Melt Furnace No.2 and Degassers No.1 and No.2 are controlled by a baghouse (ID No. EX-1). Permit V-05-065 requires that an air dispersion model protocol be submitted within 60 days of issuance of the final permit. The air dispersion model must address hydrogen fluoride emissions from the melt furnaces and degassers for the purpose of evaluating compliance with 401 KAR 53:010, ambient air quality standards. The air dispersion model must also address all potentially hazardous matter or toxic substances emitted source wide for the purpose of evaluating compliance with 401 KAR 63:020, potentially hazardous matter or toxic substances.

Permit V-05-065 requires that a performance test be conducted on Melt Furnace No. 3 to determine PM emissions within 360 days of issuance of the final permit.

This facility is not considered a secondary metal production plant because it meets the conditions detailed below in the EPA Memorandum, *Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability*, from December 4, 1998. Quoting from the memorandum, "As a result of this analysis, EPA will presume that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required; and (2) the facility does not produce intermediate forms of feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use by other facilities."

This facility is not subject to 40 CFR 63 Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production because it meets the conditions of § 63.1503 in 40 CFR 63 Subpart RRR which are detailed here. Section 63.1501 (a) of Subpart RRR states that "The requirements of this subpart apply to the owner or operator of each secondary aluminum production facility as defined in § 63.1503." A secondary aluminum production facility is defined in § 63.1503 of Subpart RRR. This is an excerpt from the secondary aluminum production facility definition: "For purposes of this subpart, aluminum die casting facilities, aluminum foundries, and aluminum extrusion facilities are not considered to be secondary aluminum production facilities if the only materials they melt are clean charge, customer returns, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers, or scrap dryers/delacquering kilns/decoating kilns."

CLA 067 Paint Line

The Color Coat Booth, EP31 (LC1) is equipped with five air atomized spray guns, the Edge Clear Booth, EP33 (LC2) is equipped with four air atomized spray guns and the Top Clear Booth, EP34 (LC3) is equipped with five air atomized spray guns. An overall transfer efficiency of 45 percent is used in the calculation of PM emissions (referenced from Chapter 4, Section 1 of the document *EPA 305-B-95-002, August, 1998, Self-Audit and Inspection Guide for Facilities Conducting Cleaning, Preparation, And Organic Coating of Metal Parts*. A control efficiency of 98 percent is used in calculating PM emissions. Each booth is equipped with filter blankets for control of PM emissions. Items painted in the Color Coat Booth are cured in the Color Bake Oven, EP32 (L5A). Items painted in the Edge Clear Booth and Top Clear Booth are cured in the Clear Bake Oven, EP35 (L9A). It is assumed that the booths and cure ovens are in a Permanent Total Enclosure (PTE) and that 100 percent of VOC emissions are captured and vented to RTO No.1. A destruction efficiency of 95 percent is used in calculating VOC emissions. The destruction efficiency is based on the performance test conducted on March 28, 2000. The permittee will be required by permit V-05-065 to determine the overall collection efficiency of VOC by RTO-1 no later than January 2, 2007. The destruction efficiency of RTO-1 must be determined no later than January 2, 2007 and once every five years thereafter.

CLA 068 Paint Line

The Black Coat Booth, EP39 (LCE, LCF & LCG) is equipped with ten air atomized spray guns, the Color Coat Booth, EP41 (LCH, LCI & LCJ) is equipped with sixteen air atomized spray guns, and the Clear Coat Booth, EP42 (LCK & LCL) is equipped with ten air atomized spray guns. An overall transfer efficiency of 45 percent is used in the calculation of PM emissions (referenced from Chapter 4, Section 1 of the document *EPA 305-B-95-002, August, 1998, Self-Audit and Inspection Guide for Facilities Conducting Cleaning, Preparation, And Organic Coating of Metal Parts*. Each booth is equipped with filter blankets for control of PM emissions. A control efficiency of 98 percent is used in calculating PM emissions. Items painted in the Black Coat Booth are cured in the Black Coat Oven, EP40 (BCO). Items painted in the Color Coat Booth and Clear Coat Booth are cured in the Color & Clear Coat Oven, EP43 (C&CCO). On January 6, 2005, the Black Coat Booth, Color Coat Booth and Clear Coat Booth enclosures (including flash off areas and cure ovens) were verified to be Permanent Total Enclosures. Therefore, the capture efficiency of VOC emissions is 100 percent. The destruction efficiency of Thermal Oxidizer (TO) No. 1 is 97.8 percent. This is based on the performance test conducted on December 1, 2004.

Applicable Regulations:

CMC Paint Line				
Emission Point Number	**Description/Process Equipment**	**Date Installed**	**Control Equipment**	**Applicable Regulations**
04 (B-5)	E-Coat Painting	12/1987		KAR 59:225
06 (B-6)	E-Coat Cure Oven / 5.1 MM BTU/hr Gas Fired Oven	11/1987	Regenerative Thermal Oxidizer ID No. RTO-2	KAR 59:225 Subpart MMMM
07 (B-8)	Top Coat Booth / 2 reciprocating sprayers with 3 electrostatic spray guns each and 4 robot air atomized spray guns	1987	3 Stage Over Spray Filters	KAR 59:010 KAR 59:225 Subpart MMMM
08 (B-9)	Paint Cure Oven / 5.1 MM BTU/hr Gas Fired Oven	12/1987	Regenerative Thermal Oxidizer ID No. RTO-2	KAR 59:225 Subpart MMMM
09 (B-12)	Repair Booth / Single manual applicator / Electric Cure Oven	1987	Single Stage Over Spray Filter	KAR 59:010 KAR 59:225 Subpart MMMM

CLA Melting and Casting				
Emission Point Number	**Description/Process Equipment**	**Date Installed**	**Control Equipment**	**Applicable Regulations**
11 (MF-002)	Melting Furnace (SP) #2/Canefco Ltd. Reverberating Furnace (7.2 Metric Ton Capacity)	July, 1993	Baghouse/Wheelabrator Model 3015 TA-SB 120 (ID No. EX-1)	401 KAR 53:010 401 KAR 59:010
12 (DG-001)	Degasser #1/Hoseko Japan	May, 1990	Baghouse/Wheelabrator Model 3015 TA-SB 120 (ID No. EX-1)	401 KAR 53:010 401 KAR 59:010
13 (DG-002)	Degasser #2/Hoseko Japan	May, 1990	Baghouse/Wheelabrator Model 3015 TA-SB 120 (ID No. EX-1)	401 KAR 53:010 401 KAR 59:010
14 (MF-003)	Melting Furnace #3/Lindberg/MPH Model No. 62-ARP 6000	May, 2002		401 KAR 53:010 401 KAR 59:010

CLA 067 Paint Line				
Emission Point Number	**Description/Process Equipment**	**Date Installed**	**Control Equipment**	**Applicable Regulations**
31 (LC1)	Color Coat Booth / 5 air atomized spray guns	10/1998	2 Stage Over Spray Filters/Regenerative Thermal Oxidizer ID No. RTO-1	KAR 59:010 KAR 59:225 Subpart MMMM
32 (L5A)	Color Bake Oven / 5.0 MM BTU/hr NG Fired Oven	10/1998	Regenerative Thermal Oxidizer ID No. RTO-1	KAR 59:225 Subpart MMMM
33 (LC2)	Edge Clear Coat Booth / 4 air atomized spray guns	10/1998	2 Stage Over Spray Filters/Regenerative Thermal Oxidizer ID No. RTO-1	KAR 59:010 KAR 59:225 Subpart MMMM
34 (LC3)	Top Clear Booth / 5 air atomized spray guns	10/1998	2 Stage Over Spray Filters/Regenerative Thermal Oxidizer ID No. RTO-1	KAR 59:010 KAR 59:225 Subpart MMMM
35 (L9A)	Clear Bake Oven / 6.0 MM BTU/hr NG Fired Oven	10/1998	Regenerative Thermal Oxidizer ID No. RTO-1	KAR 59:225 Subpart MMMM

Applicable Regulations (Continued):

CLA 068 Paint Line				
Emission Point Number	**Description/Process Equipment**	**Date Installed**	**Control Equipment**	**Applicable Regulations**
39 (LCE, LCF & LCG)	Black Coat Booth / 10 air atomized spray guns	01/2003	2 Stage Over Spray Filters/Thermal Oxidizer ID No. TO-1	KAR 59:010 KAR 59:225 Subpart MMMM
40 (BCO)	Black Coat Oven / 2.0 MM BTU/hr NG fired	01/2003	Thermal Oxidizer ID No. TO-1	KAR 59:225 Subpart MMMM
41 (LCH, LCI & LCJ)	Color Coat Booth / 16 air atomized spray guns	01/2003	2 Stage Over Spray Filters/Thermal Oxidizer ID No. TO-1	KAR 59:010 KAR 59:225 Subpart MMMM
42 (LCK & LCL)	Clear Coat Booth / 10 air atomized spray guns	01/2003	2 Stage Over Spray Filters/Thermal Oxidizer ID No. TO-1	KAR 59:010 KAR 59:225 Subpart MMMM
43 (C&CCO)	Color & Clear Coat Oven / 4.0 MM BTU/hr NG fired	01/2003	Thermal Oxidizer ID No. TO-1	KAR 59:225 Subpart MMMM

COMMENTS:

The CMC Paint Line and CLA Paint 067 Paint Line are existing sources and must be in compliance with 40 CFR 63, Subpart MMMM no later than January 2, 2007 as detailed in §63.3883 of Subpart MMMM. The CLA 068 Paint Line is a new source and must be in compliance with 40 CFR 63, Subpart MMMM as of January 2, 2004.

The permittee shall submit an air dispersion model protocol within 60 days of issuance of the final permit. The protocol shall specify the method(s) by which the emissions of potentially hazardous matter and toxic substances are determined. The Division will review the protocol and evaluate it for deficiencies. Once the Division approves the protocol, the source shall model these emissions using an EPA approved air dispersion model. The concentrations of the potentially hazardous matter and toxic substances at the CMC/CLA property boundaries must be less than the most up to date health based standards recommended by the EPA, Office of Air Quality Plan and Standards (OAQPS). The current health based standards recommended by the EPA-OAQPS are the prioritized chronic dose-response values located at http://www.epa.gov/ttn/atw/toxsource/table1.pdf and the acute dose-response values located at http://www.epa.gov/ttn/atw/toxsource/table2.pdf.

The units for cancer risk in Table 1 are $1/(\mu g/m^3)$. This is referred to as unit risk. The unit risk must be converted into a concentration so that it can be compared with modeled ambient concentrations. Unit risk can be converted into concentration using the following methodology:

COMMENTS (CONTINUED):

Let us define the term "Maximum Allowable Emission Level" x unit risk (from Table 1) = cancer risk.

Maximum Allowable Emission Level (MAEL) = risk / unit risk

The acceptable "target risk" for cancer endpoints is one-in-one million (10^{-6}) (unit-less)

MAEL ($\mu g/m^3$) = (1×10^{-6}) / unit risk

This is the value that should be compared to the modeled concentration of a pollutant.

The acceptable "target risk" for non-cancer endpoints is a hazard index of 1 or less, where hazard index is defined as:

$$Hazard\ Index = \frac{Modeled\ Concentration\ of\ X}{Concentration\ of\ X\ in\ Table}$$

EMISSION AND OPERATING CAPS DESCRIPTION:
The facility will be subject to an emission cap of 249 tons per rolling twelve-month period for VOC emissions. This emission cap will preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

PERIODIC MONITORING:

Emission Point Number(s)	Description	Monitoring Requirement(s)
01 (E-1)	Boiler (B2)	Monitor source wide natural gas usage monthly.
04 (B-5)	E-Coat Painting	Monitor paint usage monthly.
07 (B-8)	Top Coat Booth	Monitor paint usage monthly, weekly qualitative visual observations of opacity, take daily pressure drop readings and conduct daily visual inspection of filters.
06 (B-6) 08 (B-9)	E-Coat Cure Oven / 5.1 MM BTU/hr Gas Fired Oven Paint Cure Oven / 5.1 MM BTU/hr Gas Fired Oven	Monitor source wide natural gas usage monthly. Monitor RTO burner temperature every 15 minutes. Monitor RTO Burner Set-point temperature every 15 minutes. Determine RTO destruction efficiency once every 5 years. Monitor By-pass damper position weekly.
10 (EB-1)	Boiler (B1-A)	Monitor source wide natural gas usage monthly.
11 (MF-002) 12 (DG-001) 13 (DG-002)	Melting Furnace (SP) #2/Canefco Ltd. Reverberating Furnace (7.2 Metric Ton Capacity) Degasser #1/Hoseko Japan Degasser #2/Hoseko Japan	Monitor source-wide natural gas usage monthly. Monitor flux usage. Weekly qualitative visual observations of opacity. Daily monitoring of baghouse pressure drop.
14 (MF-003) 15 (DG-0030)	Melting Furnace #3/Lindberg/MPH Model No. 62-ARP 6000 Degasser #3/Hoseko Japan	Monitor source-wide natural gas usage monthly. Monitor flux usage.

PERIODIC MONITORING (CONTINUED):

Emission Point Number	Description	Monitoring Requirement(s)
16 (HF-001), 17 (HF-002), 18 (HF-003), 19 (HF-004), 20 (HF-005), 21 (HF-006), 22 (HF-007), 23 (HF-008)	Holding Furnaces #1 – 8 /Mitsubishi, Crucible Electric	Monitor flux usage.
24 (SB-001, SB-002, SB-003) 25 (BRS-001 – BRS-006)	Shot Blasters Brush Debur	Monitor shot usage. Weekly pressure change readings of the dust collection systems.
27 (L2)	Aluminum Pretreatment Dry Off Oven / 1.6 MMBTU/HR NG	Monitor source wide natural gas usage monthly.
31 (LC1) 33 (LC2) 34 (LC3)	Color Coat Booth Edge Clear Coat Booth Top Clear Booth	Monitor paint usage monthly, weekly qualitative visual observations of opacity, take daily pressure drop readings and conduct daily visual inspection of filters.
32 (L5A) 35 (L9A)	Color Bake Oven / 5.0 MM BTU/hr NG Fired Oven Clear Bake Oven / 6.0 MM BTU/hr NG Fired Oven	Monitor source wide natural gas usage monthly. Monitor RTO burner temperature every 15 minutes. Monitor RTO Burner Set-point temperature every 15 minutes. Determine RTO destruction efficiency once every 5 years. Monitor By-pass damper position weekly.
36 (L7A)	Powder Bake Oven / 6.0 MM BTU/hr NG Fired Oven	Monitor source wide natural gas usage monthly.
37 (DO) 38 (PCO)	Paint Line Dry-off Oven / 2.0 MM BTU/hr NG fired Powder Coat Oven / 3.5 MM BTU/hr NG fired	Monitor source wide natural gas usage monthly.
39 (LCE, LCF & LCG) 41 (LCH, LCI & LCJ) 42 (LCK & LCL)	Black Coat Booth Color Coat Booth Clear Coat Booth	Monitor paint usage monthly, weekly qualitative visual observations of opacity, take daily pressure drop readings and conduct daily visual inspection of filters. All applicable requirements of §63.3968 of Subpart MMMM must be met.
40 (BCO) 43 (C&CCO)	Black Coat Oven / 2.0 MM BTU/hr NG fired Color & Clear Coat Oven / 4.0 MM BTU/hr NG fired	Monitor source wide natural gas usage monthly. All applicable requirements of §63.3968 of Subpart MMMM must be met.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.